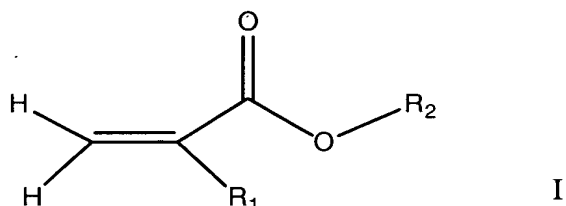


WHAT IS CLAIMED IS:

- 1 1. A photocurable ferromagnetic composition comprising:
 2 an acrylated epoxy oligomer;
 3 an ethylenically unsaturated monomer having Formula I:



- 4
 5 wherein R_1 is hydrogen or substituted or unsubstituted alkyl; and R_2 is substituted
 6 or unsubstituted alkyl having more than 4 carbon atoms, cycloalkyl, cycloalkenyl,
 7 or substituted or unsubstituted aryl;
 8 a photoinitiator; and
 9 a magnetic powder.

- 1 2. The photocurable ferromagnetic composition of claim 1
 2 wherein R_1 is hydrogen or methyl; and R_2 is isoborynl, phenyl, benzyl,
 3 dicyclopentenyl, diclypentenyl oxyethyl, cyclohexyl, and naphthyl.

- 1 3. The photocurable ferromagnetic composition of claim 1
 2 wherein the magnetic powder is ferrite.

- 1 4. The photocurable ferromagnetic composition of claim 1
 2 wherein:
 3 the acrylated epoxy oligomer present in an amount from 2 % to 6 %
 4 of the weight of the ferromagnetic composition;
 5 the photoinitiator present in an amount from 1 % to 10 % of the
 6 weight of the ferromagnetic composition; and
 7 the magnetic powder present in an amount from 20 % to 60 % of the
 8 weight of the ferromagnetic composition.

1 5. The photocurable ferromagnetic composition of claim 1
2 further comprising an acrylated aliphatic oligomer mixture.

1 6. The photocurable ferromagnetic composition of claim 5
2 wherein the acrylated aliphatic oligomer mixture is present in an amount from 15
3 % to 45 % of the weight of the ferromagnetic composition.

1 7. The photocurable ferromagnetic composition of claim 5
2 further comprising a flow promoting agent.

1 8. The photocurable ferromagnetic composition of claim 7
2 wherein the flow promoting agent is present in an amount from 0.1 % to 6 % of the
3 weight of the ferromagnetic composition.

1 9. The photocurable ferromagnetic composition of claim 7
2 wherein:
3 the acrylated epoxy oligomer is present in an amount from 3 % to 5
4 % of the weight of the ferromagnetic composition;
5 the photoinitiator is present in an amount from 2 % to 6 % of the
6 weight of the ferromagnetic composition;
7 the acrylated aliphatic oligomer mixture is present in an amount from
8 25 % to 35 % of the weight of the ferromagnetic composition;
9 the flow promoting agent is present in an amount from 0.1 % to 6 %
10 of the weight of the ferromagnetic composition; and
11 the magnetic powder is present in an amount from 30 % to 50 % of
12 the weight of the ferromagnetic composition.

1 10. The photocurable ferromagnetic composition of claim 7
2 wherein:
3 the acrylated epoxy oligomer is present in an amount of 4 % of the
4 weight of the ferromagnetic composition;

5 the photoinitiator is present in an amount of 4.5 % of the weight of
6 the ferromagnetic composition;
7 the acrylated aliphatic oligomer mixture is present in an amount of
8 30 % of the weight of the ferromagnetic composition;
9 the flow promoting agent is present in an amount of 3 % of the
10 weight of the ferromagnetic composition; and
11 the magnetic powder is present in an amount of 40 % of the weight
12 of the ferromagnetic composition.

1 11. The ferromagnetic composition of claim 1 wherein the
2 photoinitiator is selected from the group consisting of:
3 1-hydroxycyclohexyl phenyl ketone;
4 2-methyl-1-[4-(methylthio)phenyl]-2-morpholino propan-1-;
5 the combination of 50% 1-hydroxy cyclohexyl phenyl ketone and
6 50% benzophenone;
7 2,2-dimethoxy-1,2-diphenylethan-1-one;
8 the combination of 25% bis(2,6-dimethoxybenzoyl-2,4-, 4-trimethyl
9 pentyl phosphine oxide and 75% 2-hydroxy-2-methyl-1-phenyl-propan-1-one;
10 2-hydroxy-2-methyl-1-phenyl-1-propane;
11 the combination of 50% 2,4,6-trimethylbenzoyldiphenyl-phosphine
12 oxide and 50% 2-hydroxy 2-methyl-1-phenyl-propan-1-one;
13 mixed triaryl sulfonium hexafluoroantimonate salts, mixed triaryl
14 sulfonium hexafluorophosphate salts; and
15 mixtures thereof.

1 12. The ferromagnetic composition of claim 1 wherein the
2 acrylated epoxy oligomer is selected from the group consisting of:
3 novolac epoxy acrylate diluted 20 % by weight with tripropylene
4 glycol diacrylate;
5 difunctional bisphenol based epoxy acrylate; and
6 mixtures thereof.

1 13. A photocurable ferromagnetic composition comprising:
2 an acrylated epoxy oligomer;
3 an isobornyl acrylate monomer;
4 a photoinitiator; and
5 a magnetic powder.

1 14. The photocurable ferromagnetic composition of claim 13
2 wherein the magnetic powder is ferrite.

1 15. The photocurable ferromagnetic composition of claim 13
2 further comprising an acrylated aliphatic oligomer mixture.

1 16. The photocurable ferromagnetic composition of claim 13
2 further comprising a flow promoting agent.

1 17. The ferromagnetic composition of claim 13 wherein the
2 isobornyl acrylate monomer is selected from the group consisting of isobornyl
3 acrylate, isobornyl methacrylate, and mixtures thereof.

1 18. The ferromagnetic composition of claim 13 wherein the
2 photoinitiator is selected from the group consisting of:
3 1-hydroxycyclohexyl phenyl ketone;
4 2-methyl-1-[4-(methylthio)phenyl]-2-morpholino propan-1-;
5 the combination of 50% 1-hydroxy cyclohexyl phenyl ketone and
6 50% benzophenone;
7 2,2-dimethoxy-1,2-diphenylethan-1-one;
8 the combination of 25% bis(2,6-dimethoxybenzoyl-2,4-, 4-trimethyl
9 pentyl phosphine oxide and 75% 2-hydroxy-2-methyl-1-phenyl-propan-1-one;
10 2-hydroxy-2-methyl-1-phenyl-1-propane;
11 the combination of 50% 2,4,6-trimethylbenzoyldiphenyl-phosphine
12 oxide and 50% 2-hydroxy 2-methyl-1-phenyl-propan-1-one;
13 mixed triaryl sulfonium hexafluoroantimonate salts, mixed triaryl
14 sulfonium hexafluorophosphate salts; and

15 mixtures thereof.

1 19. The ferromagnetic composition of claim 13 wherein the
2 acrylated epoxy oligomer is selected from the group consisting of:
3 novolac epoxy acrylate diluted 20 % by weight with tripropylene
4 glycol diacrylate;
5 difunctional bisphenol based epoxy acrylate; and
6 mixtures thereof.